

U.S. Patent Application No. 10/088,750
Amendment After Final dated July 21, 2006
Reply to Office Action of April 25, 2006

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AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-8. (Canceled)

9. (Previously presented) The method for synthesizing a heterologous protein or a heterologous polypeptide according to claim 20, wherein the synthesis is carried out without using AUG translation initiation codon.

10-15. (Canceled)

16. (Previously presented) The method for synthesizing a heterologous protein or a heterologous polypeptide according to claim 22 wherein the synthesis is carried out without using AUG translation initiation codon.

17. (Previously presented) The method for synthesizing a heterologous protein or a heterologous polypeptide according to claim 27, wherein the synthesis is carried out without using AUG translation initiation codon.

18-19. (Canceled)

20. (Currently amended) A method for synthesizing a heterologous protein or a heterologous polypeptide comprising the steps of

providing a cell-free protein expressing system,

providing a polynucleotide encoding the heterologous protein or heterologous polypeptide and a polynucleotide that promotes translation activity, wherein the polynucleotide that promotes translation activity has an RNA higher-order structure including PK (pseudoknot) I, II, and III

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structures and is selected from:

- 1) one of the ~~base~~ sequences of SEQ ID NOs: 1-7;
- 2) ~~a base sequence of SEQ ID NO: 1, except that positions 187 - 188 of the base sequence of SEQ ID NO: 1 are cc instead of uu and positions 159 - 160 are gg instead of aa; and~~
- 2) 3) a base sequence containing ~~a~~ the base sequence of 1) or 2); and
- 3) ~~a base sequence substantially identical to the base sequence of 1) and having the at least PK (pseudoknot) I, II, and III structures or a structure homologous thereto; and~~

wherein the polynucleotide encoding the heterologous protein or heterologous polypeptide is immediately downstream from the PKI structure of the polynucleotide that promotes translation activity, and

translating the polynucleotide encoding the heterologous protein or heterologous polypeptide in the cell-free protein expressing system to form the heterologous protein or heterologous polypeptide, wherein the translating is initiated and/or promoted by the polynucleotide that promotes translation activity.

21. (Canceled)

22. (Previously presented) The method for synthesizing a heterologous protein or heterologous polypeptide according to claim 20, wherein the RNA higher-order structure comprises a base sequence selected from one of the sequences of SEQ ID NOs: 1 - 7.

23. (Currently amended) The method for synthesizing a heterologous protein or heterologous polypeptide according to claim 20, wherein the RNA higher-order structure comprises the base sequence of SEQ ID NO: 1.

24. (Canceled)

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25. (Previously presented) The method for synthesizing a heterologous protein or heterologous polypeptide according to claim 20, wherein the RNA higher-order structure comprises the base sequence of SEQ ID NO:1, except that positions 187 - 188 of the base sequence of SEQ ID NO:1 are cc instead of uu and positions 159 - 160 are gg instead of aa.

26. (Canceled)

27. (Previously presented) The method for synthesizing a heterologous protein or heterologous polypeptide according to Claim 20 wherein the protein expressing system is a wheat germ extract.

28-29. (Canceled)

30. (Currently amended) A method for initiating synthesis of an arbitrary heterologous protein or heterologous polypeptide from an arbitrary codon which comprises the steps of

providing a cell-free protein expressing system,

providing a polynucleotide encoding the arbitrary heterologous protein or heterologous polypeptide and a polynucleotide that promotes translation activity, wherein the polynucleotide that promotes translation activity ~~is obtained by changing a combination of base pairs that make up~~ has PK (pseudoknot) I, II, and III structures in a RNA high-order structure having a function for promoting a translation activity, wherein the polynucleotide encoding the heterologous protein or heterologous polypeptide is immediately downstream from the PKI structure of the polynucleotide that promotes translation activity and wherein the RNA high-order structure has a base sequence selected from:

1) one of the ~~base~~ sequences of SEQ ID NOs: 1-7;

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~~2) a base sequence of SEQ ID NO: 1, except that positions 187 - 188 of the base sequence of SEQ ID NO: 1 are cc instead of uu and positions 159 - 160 are gg instead of aa; and~~

~~2) 3) a base sequence containing a the base sequence of 1) or 2);~~

~~3) a base sequence substantially identical to the base sequence of 1) and having the at least PK (pseudoknot) I, II, and III structures or a structure homologous thereto, and~~

translating the polynucleotide encoding the arbitrary heterologous protein or heterologous polypeptide from an arbitrary codon in the cell-free protein expressing system to form the heterologous protein or heterologous polypeptide, wherein the translating is initiated and/or promoted by the polynucleotide that promotes translation activity.

31. (Canceled)

32. (New) The method for initiating the synthesis according to claim 30, wherein the RNA higher-order structure comprises the base sequence of SEQ ID NO:1, except that positions 187 - 188 of the base sequence of SEQ ID NO:1 are cc instead of uu and positions 159 - 160 are gg instead of aa.